

Claims

1. Method for improving the transmission efficiency in a communication system with a layered protocol stack, wherein data packets are processed on an upper protocol layer and said processing is controlled according to at least one timer of the upper protocol layer, wherein the data packets are forwarded to a lower protocol layer for transmission, wherein said transmission is controlled by the lower protocol layer and the transmission is performed with variable channel access delays, the method comprising the steps of
 - detection of the start of a transmission by the lower protocol layer,
 - notification of the upper protocol layer by the lower protocol layer when a transmission is started,
 - synchronization of at least one timer of the upper protocol layer according to the notification.
2. Method according to claim 1, wherein the timer models a round trip time or a back-off time.
3. Method for improving the transmission efficiency in a communication system with a layered protocol stack, wherein data packets are processed on an upper protocol layer and are forwarded to a lower protocol layer controlling the transmission, wherein transmissions are performed with a channel access delay and wherein at least one of said layers performs a scheduling of data packets for the transmission,
characterized in that
 - a scheduling of first data packets for transmission is performed,
 - a channel access delay is detected on the lower layer,
 - a check is performed whether additional data packets are ready for forwarding to the lower layer at or before the end of the channel access delay,

- a further scheduling of the first and additional data packets is performed,
 - the data packets are transmitted according to the further scheduling.
4. Method according to claim 3, wherein the scheduling is performed on the upper layer and a notification of the channel access delay by the lower layer initiates the further scheduling.
 5. Method according to claim 3, wherein a scheduling is performed on the lower layer.
 6. Method according to any preceding claim, wherein a notification is sent at the start of a transmission or at the end of a delay.
 7. Method according to any preceding claim, wherein a total channel access delay comprises at least two separate components and a notification is sent between the components.
 8. Method according to claim 7, wherein the channel access delay includes a component of arbitrary length and a notification and/or a scheduling is performed before the arbitrary delay component.
 9. Method according to any preceding claim, wherein a scheduling process is finished immediately before the scheduled data packets are transmitted.
 10. Method according to any preceding claim, wherein a notification is a primitive.
 11. Method according to any preceding claim, wherein the lower protocol layer is a medium access control sub-layer of a data link layer.
 12. Method according to any preceding claim, wherein the upper protocol layer is a radio link control sub-layer of a data link layer.

13. Method according to any preceding claim, wherein the transmission is performed on a channel which can be shared by several users and/or data flows.
14. Device in a communication system, characterized in that the device performs a method according to any of the claims 1 to 13.
15. Device according to claim 14, wherein the device is a user equipment or a network node.
16. Program unit on a data carrier or loadable into a device in a communication system comprising code for performing the steps of a method according to any of the claims 1 to 13.